

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCB Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NNMM104684
2. Name of Operator COG OPERATING LLC		6. If Indian, Allottee or Tribe Name
Contact: DEBORA WILBOURN E-Mail: dwilbourn@concho.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 2208 W MAIN ST ARTESIA, NM 88210	3b. Phone No. (include area code) Ph: 575-748-6958	8. Well Name and No. HOOFPRIENT FEDERAL COM 2H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 12 T24S R31E SESW 330FSL 2200FWL		9. API Well No. 30-015-41563
		10. Field and Pool, or Exploratory MESA VERDE; DELAWARE
		11. County or Parish, and State EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
☒ Notice of Intent	☐ Acidize ☐ Deepen ☐ Production (Start/Resume) ☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing ☐ Fracture Treat ☐ Reclamation ☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair ☐ New Construction ☐ Recomplete ☒ Other
	☐ Change Plans ☐ Plug and Abandon ☐ Temporarily Abandon ☐ Change to Original APD
	☐ Convert to Injection ☐ Plug Back ☐ Water Disposal

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG OPERATING LLC RESPECTFULLY REQUESTS THE FOLLOWING CHANGES TO THE ORIGINAL APD:

Production casing section:

Drill 7-7/8" pilot hole to 10,900' to run gyro, OH logs.

The Wolfcamp will not be penetrated; PHTD will be in carbonate section in between 2nd & 3rd BSS

ORIG PERMIT DELAWARE

Plug back PH to 10,000' with:

375 sx Class H @ 17.2ppg/0.98yield from PHTD to 10,000'

Kick off and drill 7-7/8" curve & lateral to 14,970' MD/10,550' TVD (see attached directional plan)

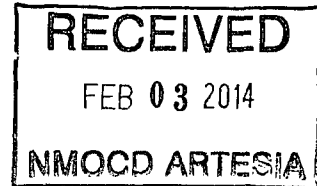
Run 5-1/2" 17# P-110 LTC csg to TD

Cmt in 2 stages with:

Submit flat for new formation

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Accepted for record



14. I hereby certify that the foregoing is true and correct.		Electronic Submission #231645 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Carlsbad Committed to AFMSS for processing by KURT SIMMONS on 01/29/2014 ()	
Name (Printed/Typed)	DEBORA WILBOURN	Title	DRLG ENGINEERING TECH
Signature	(Electronic Submission)	Date	01/09/2014
THIS SPACE FOR FEDERAL OR STATE OFFICE USE			
Approved By		Title	
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office	
		BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE	

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Additional data for EC transaction #231645 that would not fit on the form

32. Additional remarks, continued

1st stg

Lead: 750 sx 36:65:6 H + Salt + Gilsonite + CF + CFR-3 @ 12.7 ppg/1.89 yield

Tail: 950 sx 50:50:2 H + Salt + GasStop + CFR-3 @ 14.4 ppg/1.25 yield

2nd stg

Lead: 550 sx 50:50:10 H + Salt + Gilsonite + CF + CFR-3 @ 11.9 ppg/2.5 yield

Tail: 100 sx Class C @ 14.8 ppg/1.34 yield

DVT @ approx 4700?

35% excess on OH

COG Production LLC

Eddy County, NM(NAD 27 NME)

Hoofprint Fed

2H

OH

Plan: Plan #1

Standard Planning Report

07 January, 2014

Nexus Directional Solutions, LP

Planning Report

Database:	EDM/5000.1 Single-User-Db	Local Co-ordinate Reference:	Site Hoofprint/Fed:
Company:	COG Production LLC	TVD Reference:	WELL @ 3582.8usft (Original Well Elev)
Project:	Eddy County, NM(NAD 27/NME)	MD Reference:	WELL @ 3582.8usft (Original Well Elev)
Site:	Hoofprint/Fed	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project:	Eddy County, NM(NAD 27/NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Hoofprint/Fed		
Site Position:	From: Map	Northing:	446,242.90 usft
		Easting:	685,808.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 31.478 N
		Longitude:	103° 43' 56.894 W
		Grid Convergence:	0.32 °

Well:	2H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			3,564.8 usft

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	1/7/2014	7.35
			Dip Angle
			60.10
			Field Strength
			48,342

Design:	Plan #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction:
			0.45

Plan Sections:										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,072.5	0.00	0.00	10,072.5	0.0	0.0	0.00	0.00	0.00	0.00	
10,822.5	90.00	0.45	10,550.0	477.5	3.7	12.00	12.00	0.00	0.45	
14,970.3	90.00	0.45	10,550.0	4,625.1	36.1	0.00	0.00	0.00	0.00	PBHL Hoofprint Fed 2

Nexus Directional Solutions, LP

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Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00	

Nexus Directional Solutions, LP
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Wellbore:	OH		
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Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,072.5	0.00	0.00	10,072.5	0.0	0.0	0.0	0.00	0.00	0.00	
Start Build 12.00										
10,075.0	0.30	0.45	10,075.0	0.0	0.0	0.0	12.00	12.00	0.00	
10,100.0	3.30	0.45	10,100.0	0.8	0.0	0.8	12.00	12.00	0.00	
10,125.0	6.30	0.45	10,124.9	2.9	0.0	2.9	12.00	12.00	0.00	
10,150.0	9.30	0.45	10,149.7	6.3	0.0	6.3	12.00	12.00	0.00	

Nexus Directional Solutions, LP
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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,175.0	12.30	0.45	10,174.2	11.0	0.1	11.0	12.00	12.00	0.00	
10,200.0	15.30	0.45	10,198.5	16.9	0.1	16.9	12.00	12.00	0.00	
10,225.0	18.30	0.45	10,222.4	24.1	0.2	24.1	12.00	12.00	0.00	
10,250.0	21.30	0.45	10,245.9	32.6	0.3	32.6	12.00	12.00	0.00	
10,275.0	24.30	0.45	10,269.0	42.3	0.3	42.3	12.00	12.00	0.00	
10,300.0	27.30	0.45	10,291.5	53.2	0.4	53.2	12.00	12.00	0.00	
10,325.0	30.30	0.45	10,313.4	65.2	0.5	65.2	12.00	12.00	0.00	
10,350.0	33.30	0.45	10,334.6	78.4	0.6	78.4	12.00	12.00	0.00	
10,375.0	36.30	0.45	10,355.2	92.6	0.7	92.6	12.00	12.00	0.00	
10,400.0	39.30	0.45	10,374.9	108.0	0.8	108.0	12.00	12.00	0.00	
10,425.0	42.30	0.45	10,393.8	124.3	1.0	124.3	12.00	12.00	0.00	
10,450.0	45.30	0.45	10,411.9	141.6	1.1	141.6	12.00	12.00	0.00	
10,475.0	48.30	0.45	10,429.0	159.8	1.2	159.8	12.00	12.00	0.00	
10,500.0	51.30	0.45	10,445.1	178.9	1.4	178.9	12.00	12.00	0.00	
10,525.0	54.30	0.45	10,460.3	198.8	1.6	198.8	12.00	12.00	0.00	
10,550.0	57.30	0.45	10,474.3	219.5	1.7	219.5	12.00	12.00	0.00	
10,575.0	60.30	0.45	10,487.3	240.9	1.9	240.9	12.00	12.00	0.00	
10,600.0	63.30	0.45	10,499.1	262.9	2.1	262.9	12.00	12.00	0.00	
10,625.0	66.30	0.45	10,509.7	285.5	2.2	285.5	12.00	12.00	0.00	
10,650.0	69.30	0.45	10,519.2	308.7	2.4	308.7	12.00	12.00	0.00	
10,675.0	72.30	0.45	10,527.4	332.3	2.6	332.3	12.00	12.00	0.00	
10,700.0	75.30	0.45	10,534.4	356.3	2.8	356.3	12.00	12.00	0.00	
10,725.0	78.30	0.45	10,540.1	380.6	3.0	380.6	12.00	12.00	0.00	
10,750.0	81.30	0.45	10,544.5	405.2	3.2	405.2	12.00	12.00	0.00	
10,775.0	84.30	0.45	10,547.6	430.0	3.4	430.0	12.00	12.00	0.00	
10,800.0	87.30	0.45	10,549.5	454.9	3.6	454.9	12.00	12.00	0.00	
10,822.5	90.00	0.45	10,550.0	477.5	3.7	477.5	12.00	12.00	0.00	
Start 4147.8 hold at 10822.6 MD										
10,900.0	90.00	0.45	10,550.0	554.9	4.3	554.9	0.00	0.00	0.00	
11,000.0	90.00	0.45	10,550.0	654.9	5.1	654.9	0.00	0.00	0.00	
11,100.0	90.00	0.45	10,550.0	754.9	5.9	754.9	0.00	0.00	0.00	
11,200.0	90.00	0.45	10,550.0	854.9	6.7	854.9	0.00	0.00	0.00	
11,300.0	90.00	0.45	10,550.0	954.9	7.5	954.9	0.00	0.00	0.00	
11,400.0	90.00	0.45	10,550.0	1,054.9	8.2	1,054.9	0.00	0.00	0.00	
11,500.0	90.00	0.45	10,550.0	1,154.9	9.0	1,154.9	0.00	0.00	0.00	
11,600.0	90.00	0.45	10,550.0	1,254.9	9.8	1,254.9	0.00	0.00	0.00	
11,700.0	90.00	0.45	10,550.0	1,354.9	10.6	1,354.9	0.00	0.00	0.00	
11,800.0	90.00	0.45	10,550.0	1,454.9	11.4	1,454.9	0.00	0.00	0.00	
11,900.0	90.00	0.45	10,550.0	1,554.9	12.1	1,554.9	0.00	0.00	0.00	
12,000.0	90.00	0.45	10,550.0	1,654.9	12.9	1,654.9	0.00	0.00	0.00	
12,100.0	90.00	0.45	10,550.0	1,754.9	13.7	1,754.9	0.00	0.00	0.00	
12,200.0	90.00	0.45	10,550.0	1,854.9	14.5	1,854.9	0.00	0.00	0.00	
12,300.0	90.00	0.45	10,550.0	1,954.9	15.3	1,954.9	0.00	0.00	0.00	
12,400.0	90.00	0.45	10,550.0	2,054.9	16.0	2,054.9	0.00	0.00	0.00	
12,500.0	90.00	0.45	10,550.0	2,154.9	16.8	2,154.9	0.00	0.00	0.00	
12,600.0	90.00	0.45	10,550.0	2,254.9	17.6	2,254.9	0.00	0.00	0.00	
12,700.0	90.00	0.45	10,550.0	2,354.9	18.4	2,354.9	0.00	0.00	0.00	
12,800.0	90.00	0.45	10,550.0	2,454.9	19.2	2,454.9	0.00	0.00	0.00	
12,900.0	90.00	0.45	10,550.0	2,554.9	19.9	2,554.9	0.00	0.00	0.00	
13,000.0	90.00	0.45	10,550.0	2,654.8	20.7	2,654.9	0.00	0.00	0.00	
13,100.0	90.00	0.45	10,550.0	2,754.8	21.5	2,754.9	0.00	0.00	0.00	
13,200.0	90.00	0.45	10,550.0	2,854.8	22.3	2,854.9	0.00	0.00	0.00	
13,300.0	90.00	0.45	10,550.0	2,954.8	23.1	2,954.9	0.00	0.00	0.00	
13,400.0	90.00	0.45	10,550.0	3,054.8	23.8	3,054.9	0.00	0.00	0.00	

Nexus Directional Solutions, LP

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Hoofprint Fed
Company:	COG Production LLC	TVD Reference:	WELL @ 3582.8usft (Original Well Elev)
Project:	Eddy County, NM(NAD 27 NME)	MD Reference:	WELL @ 3582.8usft (Original Well Elev)
Site:	Hoofprint Fed	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,500.0	90.00	0.45	10,550.0	3,154.8	24.6	3,154.9	0.00	0.00	0.00	
13,600.0	90.00	0.45	10,550.0	3,254.8	25.4	3,254.9	0.00	0.00	0.00	
13,700.0	90.00	0.45	10,550.0	3,354.8	26.2	3,354.9	0.00	0.00	0.00	
13,800.0	90.00	0.45	10,550.0	3,454.8	27.0	3,454.9	0.00	0.00	0.00	
13,900.0	90.00	0.45	10,550.0	3,554.8	27.7	3,554.9	0.00	0.00	0.00	
14,000.0	90.00	0.45	10,550.0	3,654.8	28.5	3,654.9	0.00	0.00	0.00	
14,100.0	90.00	0.45	10,550.0	3,754.8	29.3	3,754.9	0.00	0.00	0.00	
14,200.0	90.00	0.45	10,550.0	3,854.8	30.1	3,854.9	0.00	0.00	0.00	
14,300.0	90.00	0.45	10,550.0	3,954.8	30.9	3,954.9	0.00	0.00	0.00	
14,400.0	90.00	0.45	10,550.0	4,054.8	31.6	4,054.9	0.00	0.00	0.00	
14,500.0	90.00	0.45	10,550.0	4,154.8	32.4	4,154.9	0.00	0.00	0.00	
14,600.0	90.00	0.45	10,550.0	4,254.8	33.2	4,254.9	0.00	0.00	0.00	
14,700.0	90.00	0.45	10,550.0	4,354.8	34.0	4,354.9	0.00	0.00	0.00	
14,800.0	90.00	0.45	10,550.0	4,454.8	34.8	4,454.9	0.00	0.00	0.00	
14,900.0	90.00	0.45	10,550.0	4,554.8	35.6	4,554.9	0.00	0.00	0.00	
14,970.3	90.00	0.45	10,550.0	4,625.1	36.1	4,625.2	0.00	0.00	0.00	
TD at 14970.3 - PBHL Hoofprint Fed 2H										

Design Targets										
Target Name	Dip Angle	Dip Dir	TVD	+N/-S	+E/-W	Northing	Easting	Latitude		Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
PBHL Hoofprint Fed 2H	0.00	0.00	10,550.0	4,625.1	36.1	450,868.00	685,844.70	32° 14' 17.245 N		103° 43' 56.173 W
- plan hits target center										
- Point										

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,072.5	10,072.5	0.0	0.0	Start Build 12.00
10,822.5	10,550.0	477.5	3.7	Start 4147.8 hold at 10822.5 MD
14,970.3	10,550.0	4,625.1	36.1	TD at 14970.3



NEXUS

DIRECTIONAL SOLUTIONS, L.P.

Hoofprint Fed 2H
Eddy County, NM(NAD 27 NME)
Northing: (Y) 446242.90
Easting: (X) 685808.60
Plan #1



Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.02°

Magnetic Field
Strength: 48342.2nT
Dip Angle: 60.10°
Date: 1/7/2014
Model: IGRF2010

To convert a Magnetic Direction to a Grid Direction, Add 7.02°
To convert a True Direction to a Grid Direction, Subtract 0.32°

WELL DETAILS:											
WELL @ 3582.8usft (Original Well Elev)											
+N/-S		+E/-W		Northing		Easting		Latitude		Longitude	
0.0		0.0		446242.90		685808.60		32° 13' 31.478 N		103° 43' 56.894 W	
SECTION DETAILS											
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0			
10072.5	0.00	0.00	10072.5	0.0	0.0	0.00	0.00	0.0			
10822.5	90.00	0.45	10550.0	477.5	3.7	12.00	0.45	477.5			
14970.3	90.00	0.45	10550.0	4625.1	36.1	0.00	0.00	4625.2	PBHL Hoofprint Fed 2H		
DESIGN TARGET DETAILS											
Name				TVD	+N/-S	+E/-W	Northing		Easting		
PBHL Hoofprint Fed 2H				10550.0	4625.1	36.1	450868.00		685844.70		

LEGEND

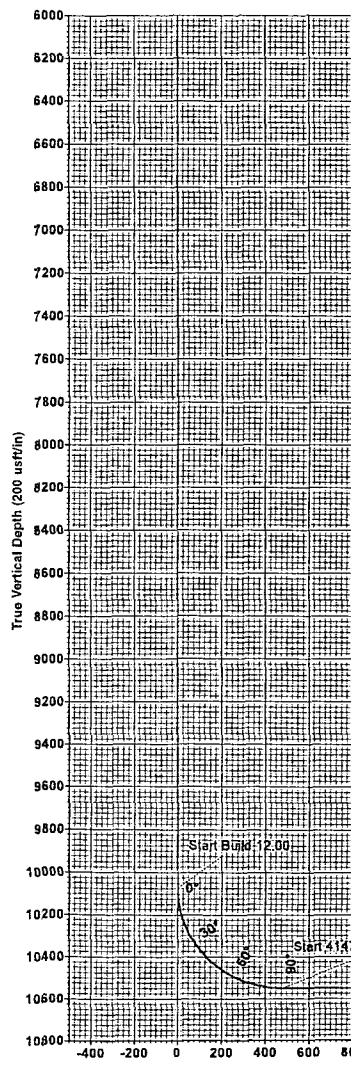
• Plan #1

Map Ships
14-25, January 07 2014
Nexus Directional Solutions
3925 CR 1285
Odessa TX 79765

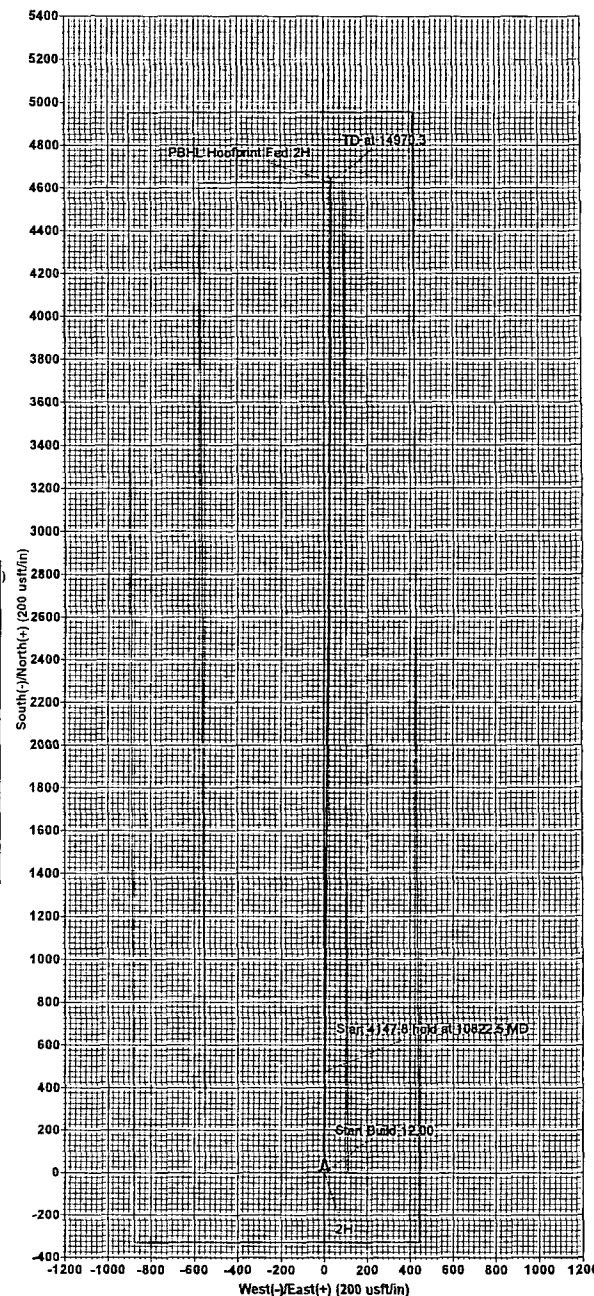
Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Site Hoofprint Fed, Grid North
Latitude: 32° 13' 31.478 N
Longitude: 103° 43' 56.894 W
Grid East: 685808.60
Grid North: 446242.90
Scale Factor: 1.000

Geomagnetic Model: IGRF2010
Sample Date: 07-Jan-14
Magnetic Declination: 7.35°
Dip Angle from Horizontal: 60.10°
Magnetic Field Strength: 48342

To convert a Magnetic Direction to a Grid Direction, Add 7.02°
To convert a Magnetic Direction to a True Direction, Add 7.35° East
To convert a True Direction to a Grid Direction, Subtract 0.32°



Vertical Section at 0.45° (200 usft/in)



CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating LLC
LEASE NO.:	NMNM-67106
WELL NAME & NO.:	Hoofprint Federal Com 2H
SURFACE HOLE FOOTAGE:	0330' FSL & 2200' FWL
BOTTOM HOLE FOOTAGE:	0330' FNL & 2260' FWL
LOCATION:	Section 12, T. 24 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico

The pilot hole plugging procedure is approved as written.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

1. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Operator has proposed DV tool at a depth of 4700'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

- a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage.

- b. Second stage above DV tool:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

CRW 012914